

REMARKS

Claims 1 and 2 are pending in the present application. No amendments to the pending claims have been made. Reconsideration and allowance in view of the following remarks is respectfully requested. It is respectfully submitted that this Request for Reconsideration is fully responsive to the Office Action dated July 14, 2004.

Objection to the Specification:

The specification stands objected to in item 1 of Action due to the Examiner's assertion that the disclosure on page 6, lines 14-16 concerning "measuring a run-out of the workpiece resulting from off-center of the workpiece," is unclear with respect to what is being measured or what is "off-center of the workpiece".

It is respectfully submitted that "Off-center of the workpiece" and "Run-out of the workpiece" are terms of art known by one of ordinary skill in the art at the time of the present invention. More specifically, "Off-center of the workpiece" is a condition in which a rotation center of a workpiece spindle is not aligned with a center of a workpiece, as shown in Fig. 1. In addition, "Run-out of the workpiece" is the movement distance which an outer or inner circumferential surface of the workpiece moves radially inwardly and outwardly periodically when the workpiece spindle which the workpiece is fixed to rotates. For example, when the workpiece spindle to which the workpiece W is fixed in "run-out of the workpiece" is rotated as shown in Fig. 1, an outer circumferential surface of the workpiece W moves radially inwardly and outwardly of the workpiece W between a circle as indicated by a chain double-dashed line and a circle as indicated by a chain line as shown in Fig. 2.

As such, it is respectfully submitted that one of ordinary skill in the art would clearly understand the feature of measuring a run-out of the workpiece resulting from off-center of the workpiece based on the present specification. Accordingly, withdrawal of the objection to the specification is respectfully requested.

35 U.S.C. §112, First Paragraph, Rejection:

Claims 1 and 2 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. This rejection is respectfully traversed.

More specifically, the Examiner takes the position that the features of claim 1, lines 6 – 8, and claim 2, lines 8 – 10, regarding “a run-out measuring device for measuring a run-out of the workpiece resulting from off-center of the workpiece mounted on the workpiece spindle” are not clearly defined in view of the specification.

However, as discussed above, “Off-center of the workpiece” and “Run-out of the workpiece” are terms of art known by one of ordinary skill in the art at the time of the present invention. That is, “Off-center of the workpiece” is in a condition that a rotation center of a workpiece spindle is not aligned with a center of a workpiece as shown in Fig. 1. In addition, as also discussed above, “Run-out of the workpiece” is the movement distance which an outer or inner circumferential surface of the workpiece moves radially inwardly and outwardly

periodically when the workpiece spindle which the workpiece is fixed to rotates. For example, when the workpiece spindle to which the workpiece W is fixed in “run-out of the workpiece” is rotated as shown in Fig. 1, an outer circumferential surface of the workpiece W moves radially inwardly and outwardly of the workpiece W between a circle as indicated by a chain double-dashed line and a circle as indicated by a chain line as shown in Fig. 2. Hence, the difference L between a radius of the circle as indicated by the chain double-dashed line and a radius of the circle as indicated by the chain line is the run-out distance.

Moreover, to measure “run-out of the workpiece” practically, while the workpiece spindle is rotated at a low speed, a detector 19a of a run-out measuring device 19 is moved at a low speed radially inwardly and outwardly of the workpiece W from an outside of an outer circumferential surface of the workpiece W or an inside of an inner circumferential surface of the workpiece W. At the time the detector 19a is brought first into contact with the outer or inner circumferential surface of the workpiece W, the position of the run-out measuring device 19 is detected. The dimension of the workpiece W (dimension of an outside or inside diameter) is previously known.

Hence, there is a distance between the position that the detector 19a should be brought into contact with the workpiece W in case of the run-out distance of the workpiece W “0” and the position that detector 19a is actually brought into contact with the workpiece W. Twice the distance is the run-out distance of the workpiece.

For example, in case of Fig. 2, the position that a detector D is brought first into contact with an outer circumferential surface of a workpiece W is on the circle as indicated by the chain double-dashed line. And, the position that the detector D should be in contact with the workpiece W in case of the run-out distance of the workpiece W "0" is on a circle as indicated by a solid line in Fig. 3. Hence, the difference between a radius of the circle as indicated by the chain double-dashed line and a radius of the circle as indicated by the solid line is "1", 2×1 is the run-out distance of the workpiece.

In view of the above, it is respectfully submitted that one of ordinary skill in the art would be able to make and/or use the present claimed invention from the original specification as filed with regard to the feature of claims 1 and 2 concerning "a run-out measuring device for measuring a run-out of the workpiece resulting from off-center of the workpiece mounted on the workpiece spindle." Accordingly, withdrawal of this rejection is respectfully requested.

Fig. 1

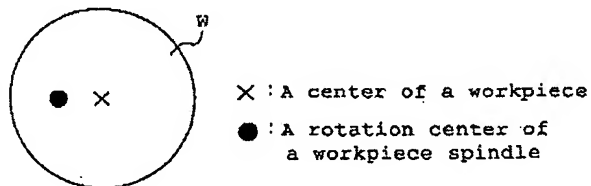


Fig. 2

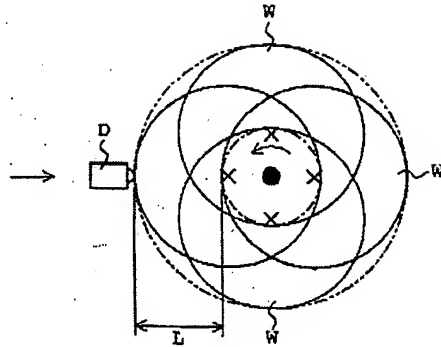
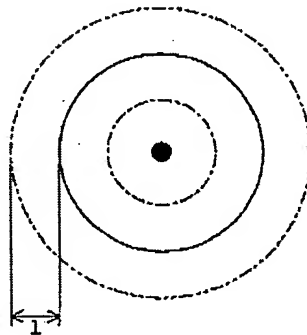


Fig. 3



As To The Merits:

As to the merits of this case, the Examiner sets for the following rejections:

claims 1 and 2 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kirkham (U.S. Patent No 4,118,871) in view of Applicant's Admitted Prior Art (AAPA).

This rejection is respectfully traversed.

The present claimed invention calls for *a run-out measuring device for measuring a run-out of the workpiece resulting from off-center of the workpiece mounted on the workpiece spindle; wherein, when the workpiece is to be fixed to the workpiece spindle by the clamp means, the centering jig is attached to the tool spindle, and the tool spindle is moved on the basis of the run-out of the workpiece measured by the run-out measuring device to center the workpiece by the centering jig.*

Kirkham teaches an inspection probe for measuring a dimension of a workpiece in a numerically controlled machine tool. The inspection probe is coupled to a portable radio transmitter mounted within a toolholder and causes the transmission characteristics of the transmitter to alter when a spherical tip makes contact with a surface of the workpiece. The inspection probe makes contact with the surface of the workpiece by the relative movement between the inspection probe attached to a spindle by the tool holder and the workpiece fixed to a worktable, and the position of the tool holder and/or the workpiece is then recorded as an indication of the corresponding workpiece dimension. The Examiner appears to think that the inspection probe corresponds to a centering jig and the portable radio transmitter corresponds to the run-out measuring device.

However, as stated above, Kirkham only teaches that the dimension of the workpiece is measured by the inspection probe which is attached to the spindle by the tool holder. Moreover, Kirkham does not teach and suggest that a run-out of the workpiece resulting from off-center of the workpiece is automatically measured by the run-out measuring device and the tool spindle is

moved on the basis of the run-out of the workpiece measured to center the workpiece by the centering jig.

In other words, Kirkham fails to disclose or fairly suggest the features of the present invention concerning *a run-out measuring device for measuring a run-out of the workpiece resulting from off-center of the workpiece mounted on the workpiece spindle; wherein, when the workpiece is to be fixed to the workpiece spindle by the clamp means, the centering jig is attached to the tool spindle, and the tool spindle is moved on the basis of the run-out of the workpiece measured by the run-out measuring device to center the workpiece by the centering jig.*

In view of the aforementioned remarks, Applicant submits that that the claims are in condition for allowance. Applicant requests such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney to arrange for an interview to expedite the disposition of this case.

Response under 37 C.F.R. §1.111

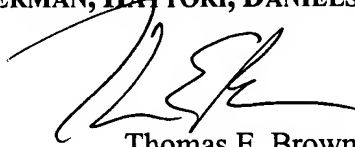
Attorney Docket No. 030889

Serial No. 10/644,788

If this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP

A handwritten signature in black ink, appearing to read 'TEB', is written over the firm name.

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